CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2017-09-23-01** **Date: 16/10/2017**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drain at Canara Banka Layout 5th Main in Ward No.09(Vidyaranyapura) Vidyaranyapura Sub Division.

Agency : Sri.T.N.Umeshenkar No.9/2, 7th Cross, Papanna Block, Ganganagara, Bangalore-560032.

Customer's Reference : BBMP/EE/BTP/WO/90/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 23-09-17

Sample ID No : 2017-09-23-01/02

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 16/10/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M15	18/09/2017	16/10/2017	151.21 X 150.11 X 150.34	22698	8.122	422.2	18.6	18.3
2	PCC	M15	18/09/2017	16/10/2017	150.26 X 150.32 X 150.11	22587	8.197	415.6	18.4	
3	PCC	M15	18/09/2017	16/10/2017	150.54 X 149.11 X 151.76	22447	8.123	401.8	17.9	

Note:

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Authorized Signatory
Quality Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

CP/TF/01

TEST REPORT ON BITUMEN

Lab ID	:	**CP-2017-10-06-02** **Date: 08-10-17**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drain at Canara Banka Layout 5th Main in Ward No.09(Vidyaranyapura) Vidyaranyapura Sub Division.
Agency	:	Sri.T.N.Umeshenkar No.9/2, 7th Cross, Papanna Block, Ganganagara, Bangalore-560032.
Customer's Reference	:	BBMP/EE/BTP/WO/90/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	06-10-17
Sample ID No	:	2017-10-06-02/01
Sample Type	:	Bitumen
Reference to BIS codes	:	IS: 1201-1220(1978) (Reaffirmed-2004)
Date of test	:	07-10-17

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	**67**	60 to 70
2	Softening Point, °C	**52.4**	Min. 40°C
3	Ductility, cm	**99**	Min. 75cm
4	Flash point, °C	**248**	Min. 220°C
	Fire point, °C	**275**	

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CP/TF/01

TEST REPORT OF PRECAST COVER SLAB

Lab ID	:	**CP-2017-09-12-01** **Date: 16-09-17**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drain at Canara Banka Layout 5th Main in Ward No.09(Vidyaranyapura) Vidyaranyapura Sub Division.
Agency	:	Sri.T.N.Umeshenkar No.9/2, 7th Cross, Papanna Block, Ganganagara, Bangalore-560032.
Customer's Reference	:	BBMP/EE/BTP/WO/90/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	12-09-17
Sample ID No	:	2017-09-12-01/04
Sample Type /Size	:	Precast Cover Slab
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete
Date of test	:	12/09/2017

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(mm)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
1	Cover Slab-1	75.21	100.49	1.276	4442	82.8	18.6	17.3	21.7
2	Cover Slab-2	75.18	100.51	1.266	4438	88.8	20.0	18.6	23.3
3	Cover Slab-3	75.15	100.52	1.252	4435	85.5	19.3	17.9	22.4

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Authorized Signatory
Quality Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	**CP-RW-2017-10-04-01** **Date: 05-10-17**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drain at Canara Banka Layout 5th Main in Ward No.09(Vidyaranyapura) Vidyaranyapura Sub Division.
Agency	:	Sri.T.N.Umeshenkar No.9/2, 7th Cross, Papanna Block, Ganganagara, Bangalore-560032.
Customer Reference	:	BBMP/EE/BTP/WO/90/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	04-10-17
Sample ID No	:	2017-10-04-01/01
Type of Mix	:	WMM (Wet Mix Macadam)
Date of test	:	04-10-17
Oven Dry Weight	:	11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	326	326	3.0	97.0	95-100
22.4	2263	2589	23.5	76.5	60-80
11.2	2176	4765	43.3	56.7	40-60
4.75	2262	7027	63.9	36.1	25-40
2.36	1609	8636	78.5	21.5	15-30
0.6	618	9254	84.1	15.9	8-22
0.075	1354	10608	96.4	3.6	0-5

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	**CP-RW-2017-10-04-01** **Date: 06-10-17**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub division, BBMP,
Address	:	Vidyaranyapura Sub division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drain at Canara Banka Layout 5th Main in Ward No.09(Vidyaranyapura) Vidyaranyapura Sub Division.
Agency	:	Sri.T.N.Umeshenkar No.9/2, 7th Cross, Papanna Block, Ganganagara, Bangalore-560032.
Customer Reference	:	BBMP/EE/BTP/WO/90/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	04-10-17
Sample ID No	:	2017-10-04-01/01
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	04-10-17

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	304.2	304.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	73.9	74.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	229.9	229.9
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.4	0.3
5	Aggregate impact value	(B/A)*100	24.3	24.3
6	Aggregate impact value (Mean of two tests)	Pecentage	24.3	

Note:-

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Authorized Signatory
Quality Manager

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2017-10-04-01** **Date: 06-10-17**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drain at Canara Banka Layout 5th Main in Ward No.09(Vidyaranyapura) Vidyaranyapura Sub Division.
Agency	:	Sri.T.N.Umeshenkar No.9/2, 7th Cross, Papanna Block, Ganganagara, Bangalore-560032.
Customer Reference	:	BBMP/EE/BTP/WO/90/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	04-10-17
Sample ID No	:	2017-10-04-01/01
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	04-10-17

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	14.9%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	13.6%	
Combined Flakiness and Elongation Index for WMM	28.5%	

Note:-
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TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2017-10-10-01**	**Date: 12-10-2017**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub division, BBMP, Bangalore.	
Address	:	Vidyaranyapura Sub division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drain at Canara Banka Layout 5th Main in Ward No.09(Vidyaranyapura) Vidyaranyapura Sub Division.	
Agency	:	Sri.T.N.Umeshenkar No.9/2, 7th Cross, Papanna Block, Ganganagara, Bangalore-560032.	
Customer Reference	:	BBMP/EE/BTP/WO/90/2017-18	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	10-10-2017	
Sample ID No	:	2017-10-10-01/01	
Type of Mix	:	BC-Plant (Bituminous Concrete)	
Date of test	:	10-10-2017	
Oven Dry Weight	:	5000	Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	89	89	1.8	98.2	90-100
9.5	702	791	15.8	84.2	70-88
4.75	895	1686	33.7	66.3	53-71
2.36	587	2273	45.5	54.5	42-58
1.18	492	2765	55.3	44.7	34-48
0.6	503	3268	65.4	34.6	26-38
0.3	528	3796	75.9	24.1	18-28
0.15	458	4254	85.1	14.9	12-20
0.075	350	4604	92.1	7.9	4-10
PAN	396	5000	100	0.0	0

Note:
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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Lab ID	:	**CP-RW-2017-10-10-01** **Date: 13-10-2017**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drain at Canara Banka Layout 5th Main in Ward No.09(Vidyaranyapura) Vidyaranyapura Sub Division.
Agency	:	Sri.T.N.Umeshenkar No.9/2, 7th Cross, Papanna Block, Ganganagara, Bangalore-560032.
Customer Reference	:	BBMP/EE/BTP/WO/90/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	10-10-2017
Sample ID No	:	2017-10-10-01/01
Type of Mix	:	BC (Bituminous Concrete)
Date of test	:	10-10-2017

Table 500-16 : Physical Requirements fo Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	13.1	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	11.8		
Strength	Aggregate Impact Value	23.8	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.56	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.38	Maximum 2%	IS:2386 Part III

Note:

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	**CP-RW-2017-10-10-01**	**Date: 13-10-2017**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub division, BBMP, Bangalore.	
Address	:	Vidyaranyapura Sub division, BBMP, Bangalore.	
Project Name	:	Improvements to Roads and Drain at Canara Banka Layout 5th Main in Ward No.09(Vidyaranyapura) Vidyaranyapura Sub Division.	
Agency	:	Sri.T.N.Umeshenkar No.9/2, 7th Cross, Papanna Block, Ganganagara, Bangalore-560032.	
Customer Reference	:	BBMP/EE/BTP/WO/90/2017-18	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	10-10-2017	
Sample ID No	:	2017-10-10-01/01	
Type of Mix	:	BC(Bitumenous Concrete)	
Date of test	:	10-10-2017	

Type of Binder	:	60/70
% of Binder Used	:	5.0%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	10.0 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	97.5	2.5	97.3	Minimum Retained Coating 95%
2	97.0	3.0		
3	97.5	2.5		

Note:
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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2017-10-10-01** **Date: 13-10-2017**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drain at Canara Banka Layout 5th Main in Ward No.09(Vidyaranyapura) Vidyaranyapura Sub Division.
Agency	:	Sri.T.N.Umeshenkar No.9/2, 7th Cross, Papanna Block, Ganganagara, Bangalore-560032.
Customer Reference	:	BBMP/EE/BTP/WO/90/2017-18
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	10-10-2017
Sample ID No	:	2017-10-10-01/01
Type of Mix	:	BC (Bituminous Concrete)
Date of test	:	10-10-2017

The results of the tests conducted on the Bituminous Concrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.21	11.34	10KN(min)
2	Marshal flow at 60°C, mm	3.53	3.59	2-4
3	Percent air Voids	4.72	4.84	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.17	14.26	13-15
5	Percent Voids filled with Bitumen(VFB %)	70.78	71.43	65-75
6	Density, g/cc	2.28	2.25	–

Note:-

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TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID	:	**CP-RW-2017-10-16-01** **Date: 18-10-17**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drain at Canara Banka Layout 5th Main in Ward No.09(Vidyaranyapura) Vidyaranyapura Sub Division.
Agency	:	Sri.T.N.Umeshenkar No.9/2, 7th Cross, Papanna Block, Ganganagara, Bangalore-560032.
Customer Reference	:	BBMP/EE/BTP/WO/90/2017-18
Source of Sample	:	Sample supplied by Agency
Date of Receipt	:	16-10-17
Sample ID No	:	2017-10-16-01/01
Type of Mix	:	BC (Bituminous Concrete)
Date of test	:	16-10-17

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	505	504
2	Weight of the sample After extraction	B	474	473
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	6.14	6.15
4	Average percentage	%	6.1	

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Lab ID : **CP-RW-2017-10-16-01** **Date: 18-10-17**

Sample ID : **2017-10-16-01/01**

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 474

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	2	2	0.4	99.6	90-100
9.5	65	67	14.1	85.9	70-88
4.75	132	199	42.0	58.0	53-71
2.36	62	261	55.1	44.9	42-58
1.18	37	298	62.9	37.1	34-48
0.6	19	317	66.9	33.1	26-38
0.3	62	379	80.0	20.0	18-28
0.15	10	389	82.1	17.9	12-20
0.075	61	450	94.9	5.1	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 473

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	3	3	0.6	99.4	90-100
9.5	74	77	16.3	83.7	70-88
4.75	125	202	42.7	57.3	53-71
2.36	51	253	53.5	46.5	42-58
1.18	39	292	61.7	38.3	34-48
0.6	21	313	66.2	33.8	26-38
0.3	55	368	77.8	22.2	18-28
0.15	32	400	84.6	15.4	12-20
0.075	46	446	94.3	5.7	4-10

Note:

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CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2017-09-12-01** **Date: 14-09-17**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drain at Canara Banka Layout 5th Main in Ward No.09(Vidyaranyapura) Vidyaranyapura Sub Division.
Agency	:	Sri.T.N.Umeshenkar No.9/2, 7th Cross, Papanna Block, Ganganagara, Bangalore-560032.
Customer's Reference	:	BBMP/EE/BTP/WO/90/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	12-09-17
Sample ID No	:	2017-09-12-01/01
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	13-09-17

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.21	–
2	Finess by Air permeablity method (m^2/kg, Min)	275.3	225m^2/kg, Min
3	Density (gm/cc)	3.18	–
4	Standard Consistency (%)	28.0%	Not specified
5	Initial Setting time	155 minutes	Not less than 30 minutes
6	Final Setting time	270 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

Note:

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Quality Manager

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CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2017-09-12-01** **Date: 11-10-17**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drain at Canara Banka Layout 5th Main in Ward No.09(Vidyaranyapura) Vidyaranyapura Sub Division.
Agency	:	Sri.T.N.Umeshenkar No.9/2, 7th Cross, Papanna Block, Ganganagara, Bangalore-560032.
Customer's Reference	:	BBMP/EE/BTP/WO/90/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	12-09-17
Sample ID No	:	2017-09-12-01/01
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	13-09-17

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.0N/mm^2	Not less than 37 N/mm^2
3	28 Days	56.5N/mm^2	Not less than 53 N/mm^2

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Authorized Signatory
Quality Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

CP/TF/01

TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-09-12-01** **Date: 15-09-17**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drain at Canara Banka Layout 5th Main in Ward No.09(Vidyaranyapura) Vidyaranyapura Sub Division.
Agency	:	Sri.T.N.Umeshenkar No.9/2, 7th Cross, Papanna Block, Ganganagara, Bangalore-560032.
Customer's Reference	:	BBMP/EE/BTP/WO/90/2017-18
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	12-09-17
Sample ID No	:	2017-09-12-01/02(a)
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	12-09-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	379	379	2.5	97.5	90-100
3	20 mm	7859	8238	54.9	45.1	30-70
4	10 mm	2759	10997	73.3	26.7	10-35
5	4.75 mm	3369	14366	95.8	4.2	0-5
6	Pan	634	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-09-12-01** **Date: 15-09-17**

Sample ID No : 2017-09-12-01/02(a)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	11.6	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	10.9	
3	Specific Gravity	2.63	–
4	Bulk Density(Loose) (Kg/l)	1.44	–
5	Bulk Density(Compacted) (Kg/l)	1.49	–
6	Water Absorption(%)	0.22	–

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Quality Manager

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CP/TF/01

TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-09-12-01** **Date: 15-09-17**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drain at Canara Banka Layout 5th Main in Ward No.09(Vidyaranyapura) Vidyaranyapura Sub Division.
Agency	:	Sri.T.N.Umeshenkar No.9/2, 7th Cross, Papanna Block, Ganganagara, Bangalore-560032.
Customer Reference	:	BBMP/EE/BTP/WO/90/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	12-09-17
Sample ID No	:	2017-09-12-01/02(b)
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	12-09-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	248	248	5.0	95.0	90-100
3	10 mm	2738	2986	59.7	40.3	25-55
4	4.75 mm	1648	4634	92.7	7.3	0-10
5	Pan	366	5000	100	0	–

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-09-12-01** **Date: 15-09-17**

Sample ID No : 2017-09-12-01/02(b)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	13.2	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.3	
3	Specific Gravity	2.59	_
4	Bulk Density(Loose) (Kg/l)	1.44	_
5	Bulk Density(Compacted) (Kg/l)	1.48	_
6	Water Absorption(%)	0.28	_
7	Aggregate crushing Value(%)	22.4	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	23.2	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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Authorized Signature
Quality Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

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TEST REPORT OF FINE AGGREGATE

Lab ID	:	**CP-2017-09-12-01** **Date: 15-09-17**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Roads and Drain at Canara Banka Layout 5th Main in Ward No.09(Vidyaranyapura) Vidyaranyapura Sub Division.
Agency	:	Sri.T.N.Umeshenkar No.9/2, 7th Cross, Papanna Block, Ganganagara, Bangalore-560032.
Customer's Reference	:	BBMP/EE/BTP/WO/90/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	12-09-17
Sample ID No	:	2017-09-12-01/03
Sample Type	:	Fine Aggregate
Reference to BIS codes	:	IS 383 : 2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1, 3) RA2012 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
Date of test	:	12-09-17
Total weight taken	:	1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	41	41	4.1	95.9	90-100	90-100	90-100	95-100
3	2.36 mm	81	122	12.2	87.8	60-95	75-100	85-100	95-100
4	1.18 mm	123	245	24.5	75.5	30-70	55-90	75-100	90-100
5	600 micron	168	413	41.3	58.7	15-34	35-59	60-79	80-100
6	300 micron	425	838	83.8	16.2	5-20	8-30	12-40	15-50
7	150 micron	101	939	93.9	6.1	0-10	0-10	0-10	0-15
8	Pan	61	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2017-09-12-01** **Date: 15-09-17**

Sample ID No : 2017-09-12-01/03

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	2.16	_
2	Specific Gravity	2.5	_
3	Material finer than 75 micron(%)	5.4	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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Authorized Signatory
Quality Manager

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CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2017-09-23-01** **Date: 25/09/2017**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Roads and Drain at Canara Banka Layout 5th Main in Ward No.09(Vidyaranyapura) Vidyaranyapura Sub Division.

Agency : Sri.T.N.Umeshenkar No.9/2, 7th Cross, Papanna Block, Ganganagara, Bangalore-560032.

Customer's Reference : BBMP/EE/BTP/WO/90/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 23-09-17

Sample ID No : 2017-09-23-01/01

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 25/09/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M15	18/09/2017	25/09/2017	148.98 X 151.67 X 150.55	22596	8.132	277.9	12.3	12.4
2	PCC	M15	18/09/2017	25/09/2017	149.91 X 150.11 X 150.22	22503	8.105	272.3	12.1	
3	PCC	M15	18/09/2017	25/09/2017	150.54 X 150.65 X 150.18	22679	8.172	288.0	12.7	

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